

Human and Natural Environment: Conditions and Potential Effects

The Documented Categorical Exclusion must present the effects of the planned transit improvements on environmental conditions—both human and natural—within the project corridor.

Human Environment:

- **Socioeconomics** – No negative effects are expected to residents within the corridor. Residents are expected to benefit from improved access to area resources.
- **Community Resources** – 17 community resources are located within ¼ mile of the proposed station stops. No negative effect is expected to community resources within the project corridor. Improved access is expected to the resources as a result of the project.
- **Land Use** – Land use within the corridor ranges from single-family residential neighborhoods to the west of Route 1 in Alexandria and Arlington to dense mixed-use patterns in Pentagon City and Crystal City. No negative effect to existing land use is expected to occur because of the project.
- **Cultural/Historic Resources**
 - **Archaeological** – Six archaeological sites are located in the vicinity of proposed stops in the corridor. Five are in the City of Alexandria and one is in Arlington County. Archaeological monitoring will be conducted during construction of the busway.
 - **Architectural** – No adverse effect is expected to architectural resources.

Natural Environment:

- **Air Quality** – No adverse effect to existing air quality is expected.
 - **Noise** – Existing noise levels are primarily dominated by motor vehicle traffic on Route 1 and other local streets, as well as by Amtrak and VRE. No adverse noise effect is expected.
 - **Water Resources** – The project is within Virginia's coastal zone management area; however, no construction within or over wetlands or waters of the U.S. will occur. The proposed stops are located within a Resource Management Area (RMA). One proposed stop at Four Mile Run is potentially located within a Resource Protection Area (RPA). The Four Mile Run Stop will require review and approval from the City of Alexandria and Arlington County. A Virginia Pollutant Discharge Elimination System (VPDES) General Permit for discharges of stormwater from all project construction activities will also be required.
 - **Parklands and Recreational Areas** – Four parks and/or recreational areas are adjacent to the planned alignment. No State Natural Area Preserves exist in the project corridor. Since all construction will occur within existing roadways, no adverse effects are expected to parklands, recreational areas, or State Natural Area Preserves.
 - **Hazardous Materials** – Nine contaminated and/or hazardous materials sites are located within the corridor that may be affected by the project. Sites will be monitored during engineering and construction of the project.
 - **Threatened and Endangered Species** – Since the project is not located in an area where federally listed species occur, no adverse effect to federally listed species or federally designated critical habitat is expected.
- ◀ *Del Ray is one of the historic districts adjacent to the Crystal City/Potomac Yard corridor.*



Transportation Facilities and Operations: Conditions and Potential Effects

The Documented Categorical Exclusion must present the effects of the planned transit improvements on transportation facilities and operations within the project corridor. The analysis compared future conditions (for 2015 and 2030) with and without the improvements.

• Transit

Intense development along the study corridor is contributing to an increasing demand for transit service. Estimates of that demand over time inform plans for how the transit service will operate. The No-Build cases for 2015 and 2030 include the planned route structure for Metrobus and DASH service. The key assumption is that service along the 9S and 9E routes would be augmented to handle the increased demand. The planned improvements, or Build case, replace the 9S and 9E routes with an upgraded service that uses the proposed busway and includes enhanced station stops and passenger information. Buses traveling along the busway will improve speed and reliability of travel for passengers.

• Transportation Infrastructure

Several physical changes will accompany the transit improvements: construction of new busway lanes along Route 1 in Alexandria and along South Glebe Road, Crystal Drive, South Bell and South Clark Streets in Arlington; conversion of two-way to one-way operation along portions of 26th Street S., 20th Street S., and South Bell Street in Arlington; and operation of new signals and signal phases at selected intersections throughout the corridor.

• Traffic Effects

A computer simulation was used to project how the planned transit service will affect traffic operations at 14 key corridor intersections. Compared with No Build conditions, the planned service would lead to minor increases in traffic delay at several intersections, most of which would be congested already in the future. At other intersections, the transit improvements would actually lead to improved traffic conditions because they would channel traffic more efficiently. Along Route 1 in Alexandria, a median busway would have less impact on traffic flow than curbside bus lanes.

• Parking and Building Access

Transit improvements will be designed to preserve vehicular access for businesses and residences along the corridor. Loading and unloading zones may be reconfigured to provide adequate clearance for the busway, and on-street parking will be relocated along some portions of the busway.

• Pedestrian Effects

Pedestrian access will be enhanced with the planned transit improvements. Sidewalks and crosswalks near station stops will be improved. At some intersections there will be more crossing time for pedestrians; at other intersections there will be a "pedestrian only" signal phase. A reconfigured Route 1 in Alexandria will provide more closely spaced pedestrian refuge areas.



▲ Among the changes to transportation infrastructure in the corridor is a series of busways, in which transit vehicles will operate independent of other traffic. One such busway is slated to run parallel to Crystal Drive in Arlington, shown above as green space.